COLSTRIP 12d UPDATE

Battelle Northwest Labs 2001 Monitoring Report

Colstrip Generating Units 1 through 4 are situated just east of the town of Colstrip in Rosebud County. The Board of Natural Resources and Conservation (BNRC) approved a Certificate of Environmental Compatibility and Public Need for Colstrip Units 3 and 4 under the Major Facility Siting Act in 1976. Unit 3 has been operating since 1983, and Unit 4 went on-line in 1986.

Throughout the Colstrip 3 and 4 permitting and design process, many people raised concerns over seepage control from the effluent holding pond (EHP), and the possible degradation of water quality that could result from a leaking pond. The EHP is used to dispose of bottom ash, fly ash, and scrubber wastes from the generating plants (Figure 1). Bottom ash is hauled to the EHP as a solid for disposal. Fly ash and scrubber wastes are transported to the EHP by pipeline as slurry. Solids settle from the slurry in upper cells of the EHP and "clear" water is collected at the lowest cell, the clearwell, and returned to the plant for reuse. In the ash disposal process water used in the slurry dissolves minerals in the ash and scrubber waste. Dissolved minerals are further concentrated by evaporation. Table 1 provides a summary of water quality in the EHP. Because of concerns over leakage from the ponds, BNRC attached condition 12d to the certificate, requiring:

> That the sludge pond or ponds shall be completely sealed. If the conventional means such as compaction and bentonite application do not seal the pond(s), as indicated by monitoring wells the Applicants shall install and operate, then extreme measures even up to complete sealing by a plastic membrane shall be taken.

After a legal stalemate on the definition of "completely sealed", emphasis was shifted to resolution of the issue outside the courts. A Technical Committee was formed to design a monitoring program to adequately assess water quality changes. In 1984, the final conditions of the 12(d) stipulation (see attachment 1) were signed by all involved.

In addition to development of replacement wells, the 12(d) stipulation provides for a water quality-monitoring program. In general, this monitoring is annually conducted along the Cow Creek drainage on land downstream of Colstrip Units 3 and 4 as well as the Pony Creek drainage further north. If monitoring of Cow Creek does not show an abrupt increase in specific electrical conductivity (SC) or boron derived from bedrock strata underlying the alluvium as measured by any of a series of monitoring wells between the MPC-Genie property line and the Stinking Spring, MPC (now PP&L Montana) agreed to manage groundwater flow in the Cow Creek alluvial system. If monitoring were to show an abrupt increase, MPC agreed to intercept the bad quality water at the Stinking Spring or another point where an adequate interception system could be constructed. PP&L Montana assumed these responsibilities when the Certificate was transferred to PP&L Montana from MPC.

A series of monitoring wells continue to be operated by PP&L Montana near the Effluent Holding Pond (EHP) serving Colstrip Generating Units 3 and 4 but above the PP&L-Genie Land Company property line. Portions of this monitoring system in the Cow Creek drainage have detected seepage from the EHP. Additional monitoring wells are operated in tributaries to Cow Creek affected by past spills from pipelines between the EHP and the plants or drain ponds serving these pipelines. Detection of leakage in these monitoring wells necessitated construction and operation of a series of interception wells and trenches near the EHP and below the drain ponds. These interception systems and wells are located well upstream from the property line. Based on PP&L Montana's 2001 monitoring report, these interception measures have been able to capture most seepage and prevent it from reaching monitoring sites just above the property line. At these wells there has been an increase in dissolved constituents in the last year or two after a three to four year improvement in water quality.

In order to implement the monitoring portion of the 12d stipulation, a contractor was chosen by Genie Land Company (the landowner to the east) and approved by all the 12d signatories. Battelle Northwest Labs (the contractor) contracts with Montana State University's Reclamation Research Unit to collect samples from springs, wells, and surface water sites on Genie Land Co. property. Samples were analyzed by Laucks Laboratory, Inc. last year. Battelle analyzes the results and prepares the 12d report each year.

From the specific electrical conductivity and boron results contained in Battelle's 2001 report, the Department concurs with the conclusion that there are currently no impacts on water quality from operations of Units 3 and 4 Effluent Holding Pond. The report made an important point

that if current increasing trends in boron concentrations continue for several sampling points in Cow and South Fork Cow creek drainages, these trends may become significant. While there is no need for an additional interception system near the Stinking Spring based on 2001 monitoring, future results for these sample sites and wells located closer to the Effluent Holding Pond will be carefully watched.